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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,965	08/01/2005	Charles Yang	1321-14 PCT US	2996

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EXAMINER	
LEE, DORIS L	

ART UNIT	PAPER NUMBER
4145	

MAIL DATE	DELIVERY MODE
02/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,965	YANG ET AL.	
	Examiner	Art Unit	
	Doris L. Lee	4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20041220*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: **claims 7 and 12-14** recite the limitation "CAS No. 70715-06-09". This limitation is not supported in the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 7-10 and 15-16** are rejected under 35 U.S.C. 102(b) as being unpatentable over **Fearing (US 4,355,178)**.

Regarding claim 1, Fearing teaches a composition for treating cellulosic material (C9/L41; cotton) which comprises

- a hydroxyl-functional phosphorus ester containing at least two phosphorus atoms therein (C15/L12)
- a melamine-formaldehyde resin (C15/L15)
- a curing catalyst (C15/L17).

Regarding claims 7-10, Fearing discloses all the limitations as set forth above.

In addition, Fearing discloses that the hydroxyl-functional phosphorus ester is a mixed phosphate/phosphonate ester, a polyphosphate and a polyphosphonate (Abstract).

Regarding the recitation of a method of making said phosphate ester, it is noted that the determination of patentability is determined by the recited chemical structure and not by a method of making said structure. A claim containing a recitation with respect to the manner in which a claimed chemical structure is made does not differentiate the claimed chemical from a prior art chemical if the prior art chemical teaches all the structural limitations of the claim.

Regarding claim 15, Fearing discloses all the limitations as set forth above. In addition, it discloses a composition wherein the hydroxyl-functional phosphorus ester conforms to the formula as recited in the instant claim where R_1 is independently selected from alkyl and hydroxyalkyl, R_2 is independently selected from alkyl, alkoxy, and hydroxyalkoxy and n is equal to or greater than 1 (Abstract)

Regarding claim 16, Fearing discloses all the limitations as set forth above. In addition, it teaches a fabric treated with the composition as set forth above **(Abstract)**.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 2-5 and 17-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fearing (US 4,355,178)**, as applied to claim 1 above, in view of **Swidler (US 3,874,912)**.

Regarding claim 2-5, Fearing discloses all the limitations as set forth above. Additionally, Fearing discloses that the curing catalyst is zinc nitrate (C15/L17), but Fearing does not explicitly teach that the curing catalyst is an ammonium salt or a mixture of magnesium dichloride (a Lewis acid) and a citric acid (a carboxylic acid).

Swidler discloses a similar composition for treating cellulosic materials with a hydroxyl phosphorous compound (C3/L27-32), a melamine-formaldehyde resin (C8/L18-20), and a curing catalyst of which one is zinc nitrate (C8/L37-42). Swidler further goes on to teach other curing catalysts which work equally well in the composition for treating cellulosic material (C8/L37-42) such as

- ammonium chloride (C8/L39) which is an ammonium salt.

- a mixture of a magnesium dichloride (a Lewis acid) and a citric acid (a carboxylic acid) (C8/L37-42).

The substitution of one known element (the curing catalyst of Swidler) for another (the zinc nitrate curing catalyst of Fearing) would have been obvious to one of ordinary skill in the art at the time of the invention since substitution of the curing catalysts of Swidler would have yielded predictable results, namely, the formation of the covalent bonds between the component of the mixture to provide a durable textile finish. A substitution of known equivalent curing catalysts is generally recognized as being within the level of ordinary skill in the art.

Regarding claims 17-20, modified Fearing discloses all the limitations as set forth above.

In addition, it discloses a composition wherein the hydroxyl-functional phosphorus ester conforms to the formula as recited in the instant claim where R1 is independently selected from alkyl and hydroxyalkyl, R2 is independently selected from alkyl, alkoxy, and hydroxyalkoxy and n is equal to or greater than 1 (Abstract).

7. **Claims 6**, **11 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fearing (US 4,335,178)**, as applied to claim 1 above, in view of **Wu (US 3,713,897)**.

Regarding claim 6, Fearing discloses all the limitations as set forth above.

In addition, Fearing discloses that the curing catalyst is zinc nitrate (C15/L17).

However, Fearing does not teach that the curing catalyst is selected from the group consisting of phosphorus acid and phosphoric acid.

Wu discloses a similar composition for treating cellulosic materials with a hydroxyl phosphorous compound, a melamine-formaldehyde resin and a curing catalyst (C18/Example 25)

Wu further goes on to teach that the curing catalyst can be either a zinc salt (such as zinc nitrate) or phosphoric acid (C15/L34-38).

The substitution of one known element (the phosphoric acid curing catalyst of Wu) for another (the zinc nitrate curing catalyst of Fearing) would have been obvious to one of ordinary skill in the art at the time of the invention since substitution of the curing catalysts of Wu would have yielded predictable results, namely, the formation of the covalent bonds between the component of the mixture to provide a durable textile finish. A substitution of known equivalent curing catalysts is generally recognized as being within the level of ordinary skill in the art.

Regarding claim 11, Fearing discloses all the limitations as set forth above. However, it does not teach that the composition further comprises a M-methylol functional resin, nor does it teach that said resin is DMDHEU.

Wu discloses phosphorus compound (C4/L35-38), comprising of a melamine formaldehyde resin (C14/L42-47), DMDHEU (C14/L1-8) and a curing catalyst (C15/L25-38).

Wu discloses that although the melamine formaldehyde resin is preferred, the addition of DMDHEU will result in equally good results (C14/L57-60), and thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add DMDHEU of Wu to the composition of Fearing to achieve the durable press

characteristics of the cellulosic material. A substitution of known equivalent compounds is generally recognized as being within the level of ordinary skill in the art.

Regarding claim 14, Fearing discloses all the limitations as set forth above.

In addition, Fearing discloses that the curing catalyst is zinc nitrate (C15/L17).

However, Fearing does not teach that the curing catalyst is selected from the group consisting of phosphorus acid and phosphoric acid nor does it disclose the addition of the DMDHEU.

Wu discloses a similar composition for treating cellulosic materials with a hydroxyl phosphorous compound, a melamine-formaldehyde resin and a curing catalyst (C18/Example 25). Wu also discloses that DMDHEU (C14/L1-8) can be used in the composition. Wu further goes on to teach that the curing catalyst can be either a zinc salt (such as zinc nitrate) or phosphoric acid (C15/L34-38).

The substitution of one known element (the phosphoric acid curing catalyst of Wu) for another (the zinc nitrate curing catalyst of Fearing) would have been obvious to one of ordinary skill in the art at the time of the invention since substitution of the curing catalysts of Wu would have yielded predictable results, namely, the formation of the covalent bonds between the component of the mixture to provide a durable textile finish. A substitution of known equivalent curing catalysts is generally recognized as being within the level of ordinary skill in the art.

Wu discloses that although the melamine formaldehyde resin is preferred, the addition of DMDHEU will result in equally good results (C14/L57-60), and thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to add DMDHEU of Wu to the composition of Fearing to achieve the durable press characteristics of the cellulosic material. A substitution of known equivalent compounds is generally recognized as being within the level of ordinary skill in the art.

8. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fearing (US 4,355,178)** as applied to claim1 above, and further in view of **Wu (US 3,713,897)** and **Swidler (US 3,874,912)**.

Regarding claim 12 and 13, Fearing discloses all the limitations as set forth above.

In addition, Fearing discloses that the hydroxyl-functional phosphorus ester is a mixed phosphate/phosphonate ester, a polyphosphate and a polyphosphonate (Abstract).

Regarding the recitation of a method of making said phosphate ester, it is noted that the determination of patentability is determined by the recited chemical structure and not by a method of making said structure. A claim containing a recitation with respect to the manner in which a claimed chemical structure is made does not differentiate the claimed chemical from a prior art apparatus if the prior art chemical teaches all the structural limitations of the claim.

In addition, Fearing discloses that the curing catalyst is zinc nitrate (C15/L17).

However, Fearing does not explicitly teach that the curing catalyst is an ammonium salt or a mixture of magnesium dichloride (a Lewis acid) and a citric acid (a carboxylic acid) nor does it disclose the addition of DMDHEU as the N-methylol functional resin.

Swidler discloses a similar composition for treating cellulosic materials with a hydroxyl phosphorous compound (C3/L27-32), a melamine-formaldehyde resin (C8/L18-20), and a curing catalyst of which one is zinc nitrate (C8/L37-42). Swidler further goes on to teach that the curing catalyst can be

- ammonium chloride (C15/L34) which is an ammonium salt.
- a mixture of a magnesium dichloride (a Lewis acid) and a citric acid (a carboxylic acid) (C8/L37-42).

The substitution of one known element (the curing catalyst of Swidler) for another (the zinc nitrate curing catalyst of Fearing) would have been obvious to one of ordinary skill in the art at the time of the invention since substitution of the curing catalysts of Swidler would have yielded predictable results, namely, the formation of the covalent bonds between the component of the mixture to provide a durable textile finish. A substitution of known equivalent curing catalysts is generally recognized as being within the level of ordinary skill in the art.

Regarding the addition of DMDHEU, Wu discloses phosphorus compound (C4/L35-38), comprising of a melamine formaldehyde resin (C14/L42-47), DMDHEU (C14/L1-8) and a curing catalyst (C15/L25-38).

Wu discloses that although the melamine formaldehyde resin is preferred, the addition of DMDHEU will result in equally good results (C14/L57-60), and thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add DMDHEU of Wu to the composition of Fearing to achieve the durable press

characteristics of the cellulosic material. A substitution of known equivalent compounds is generally recognized as being within the level of ordinary skill in the art.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doris L. Lee whose telephone number is (571)270-3872. The examiner can normally be reached on Mon - Thurs, 7:30am - 5pm EST and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DLL 01/30/2008

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 4145